



Electronic Collaboration for the New Millennium

Internet-Based Tools and Techniques for
Sharing Information

The New Millennium Program Documentation Team

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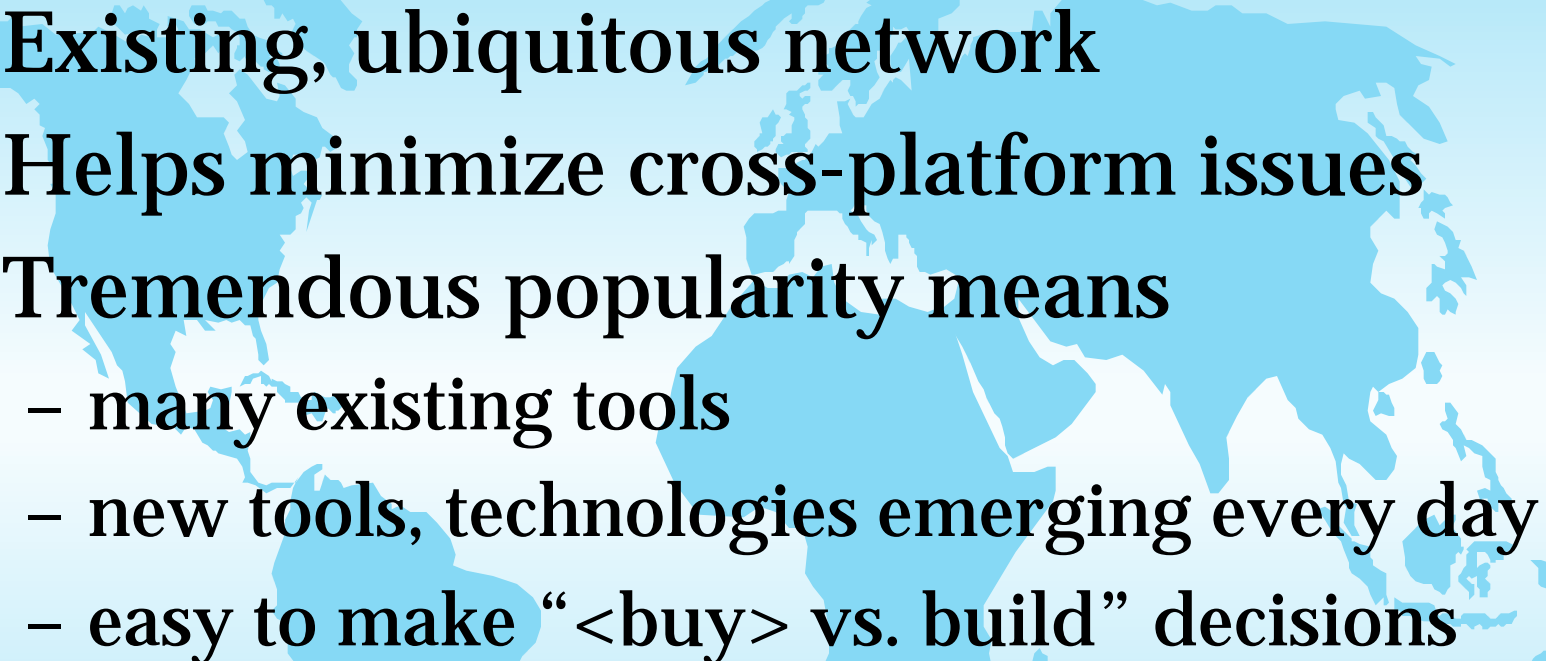
Overview

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- ◆ Motivation
 - ◆ Goals, Objectives, & Approach
 - ◆ Functionality
 - ◆ System Architecture
 - ◆ Usage
 - ◆ Future Plans

Motivation: Do More With Less

- ◆ Agency-wide challenge
- ◆ NMP:
 - Reduce D&D lifecycle from 10+ to 1-2 years
 - Improve communication among participants
 - ◆ Overcome geographical differences
 - ◆ Accommodate “computational” differences
 - ◆ Help many types of users
 - Scientists
 - Technicians
 - Administrative folks
 - Managers

Why use the Internet?

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- ◆ Existing, ubiquitous network
 - ◆ Helps minimize cross-platform issues
 - ◆ Tremendous popularity means
 - many existing tools
 - new tools, technologies emerging every day
 - easy to make “<buy> vs. build” decisions

Why *not* use the Internet?

Objectives

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- ◆ Facilitate the sharing of information among NM participants
 - ◆ Study issues associated with electronic collaboration information sharing, including:
 - Design Knowledge Capture and Re-use
 - Overcoming platform dependency
 - Security

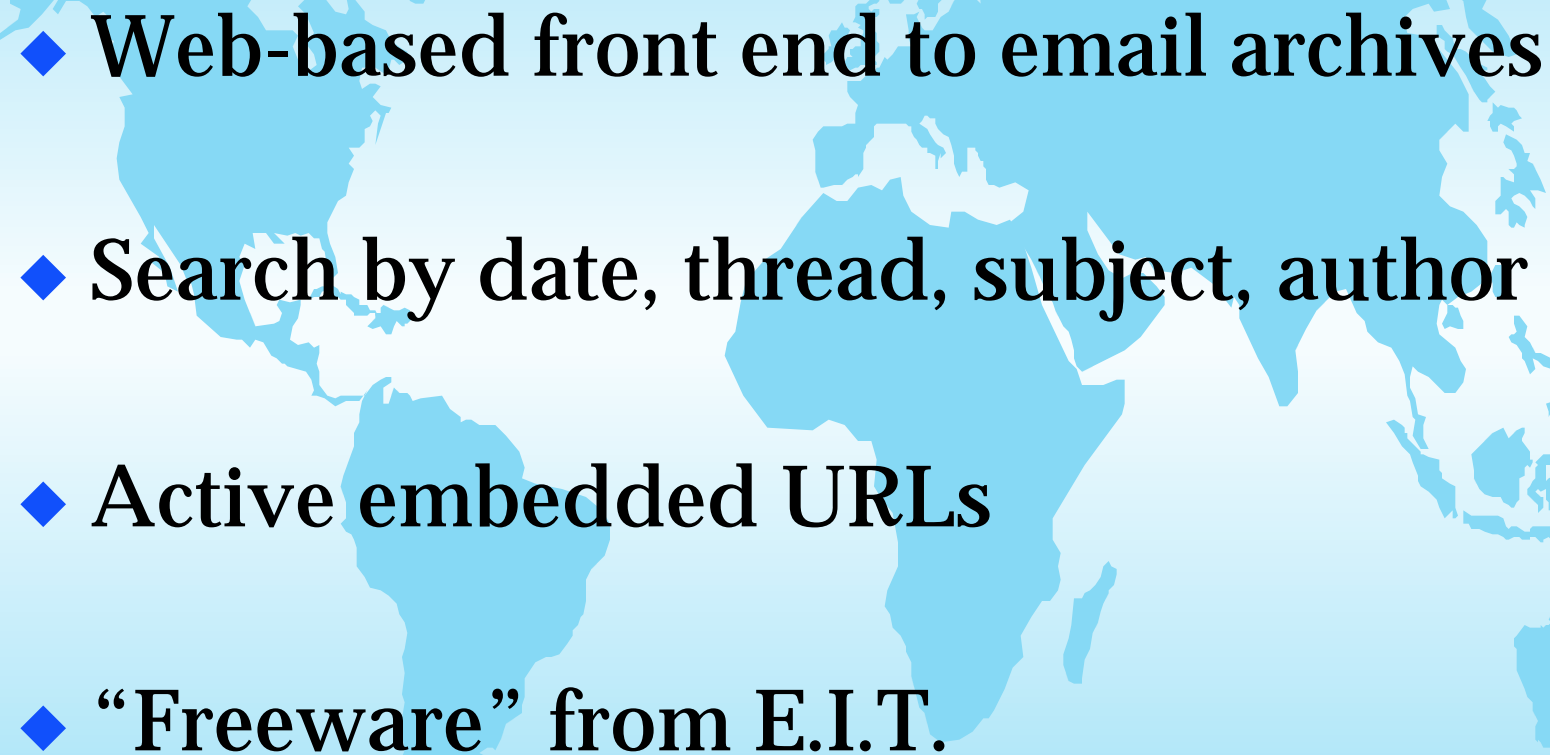
Philosophy

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- ◆ Users specify content; Doc Team provides infrastructure and tools
 - ◆ Use existing tools where possible
 - ◆ Automate Doc Team tasks

Functionality:

- ◆ User registration
- ◆ User profile management
- ◆ Search for people, documents
- ◆ Document Posting
 - Automatic translation to PDF
 - Retrievable in PDF or native format
- ◆ Email archives
- ◆ Mailing List Manager
- ◆ Action Item Management

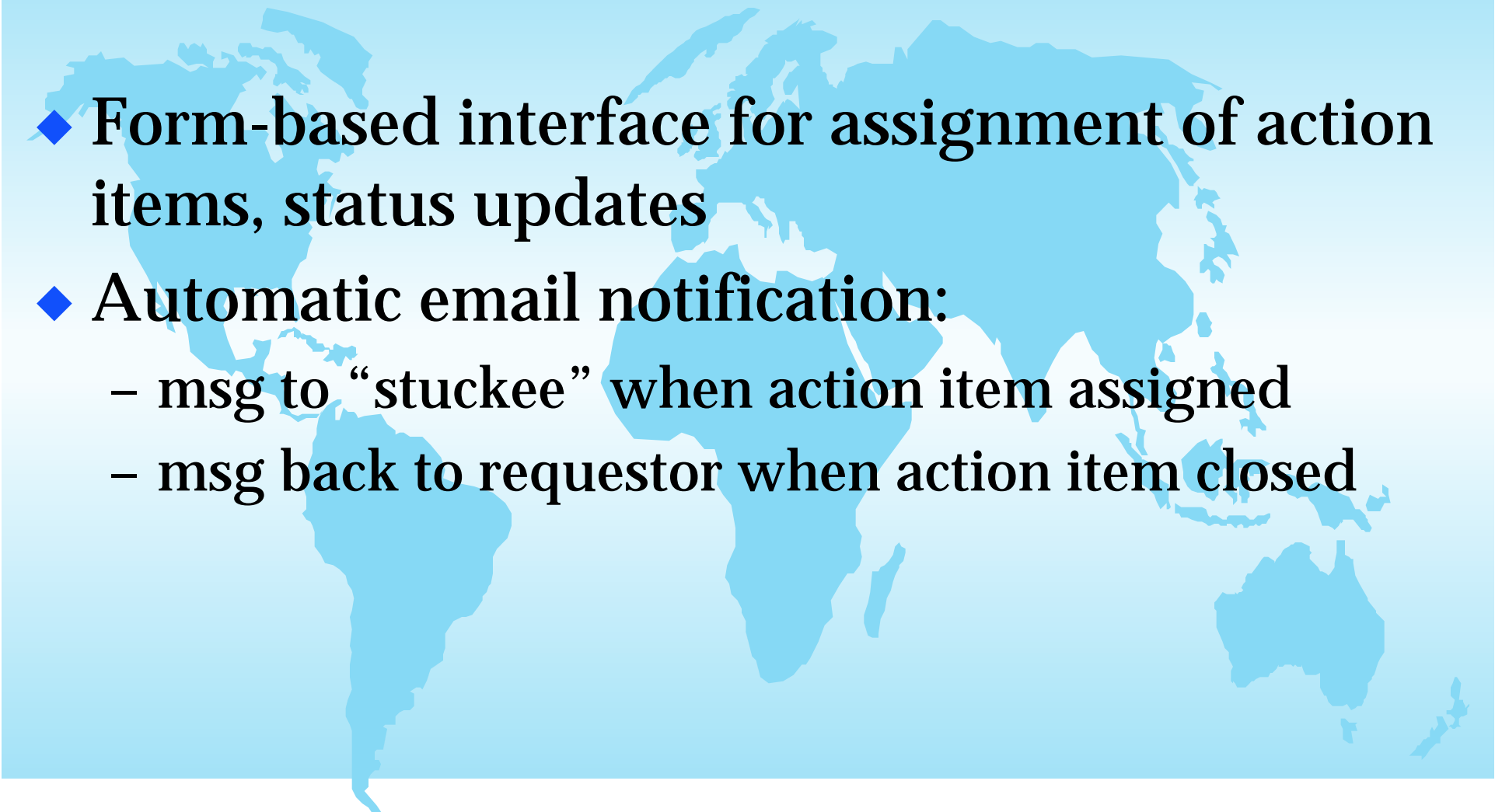
HyperMail

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- ◆ Web-based front end to email archives
 - ◆ Search by date, thread, subject, author
 - ◆ Active embedded URLs
 - ◆ “Freeware” from E.I.T.

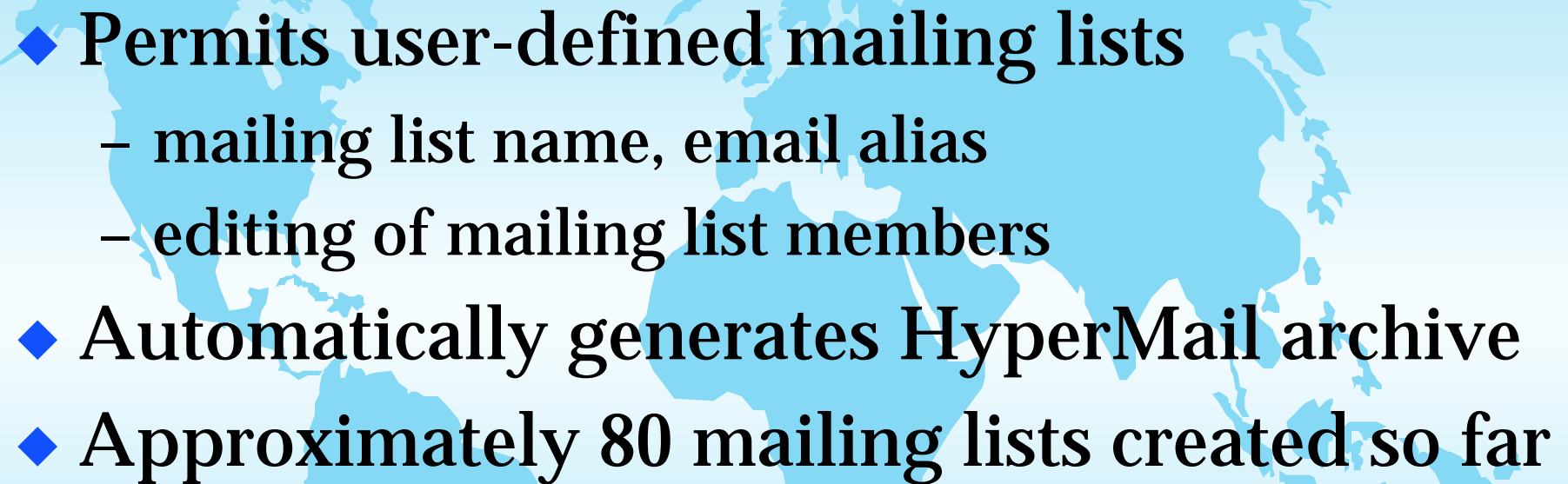
Automatic Document Posting

- ◆ Easy-to-use mechanism for submitting documents to be shared
- ◆ Supports many different file formats (Word, Excel, PowerPoint, FastTrack, PDF, PS, GIF, TIFF, HTML, MPEG, text)
- ◆ Automatic conversion to PDF
- ◆ User-controlled organization of documents
- ◆ Automatic group notification of new documents

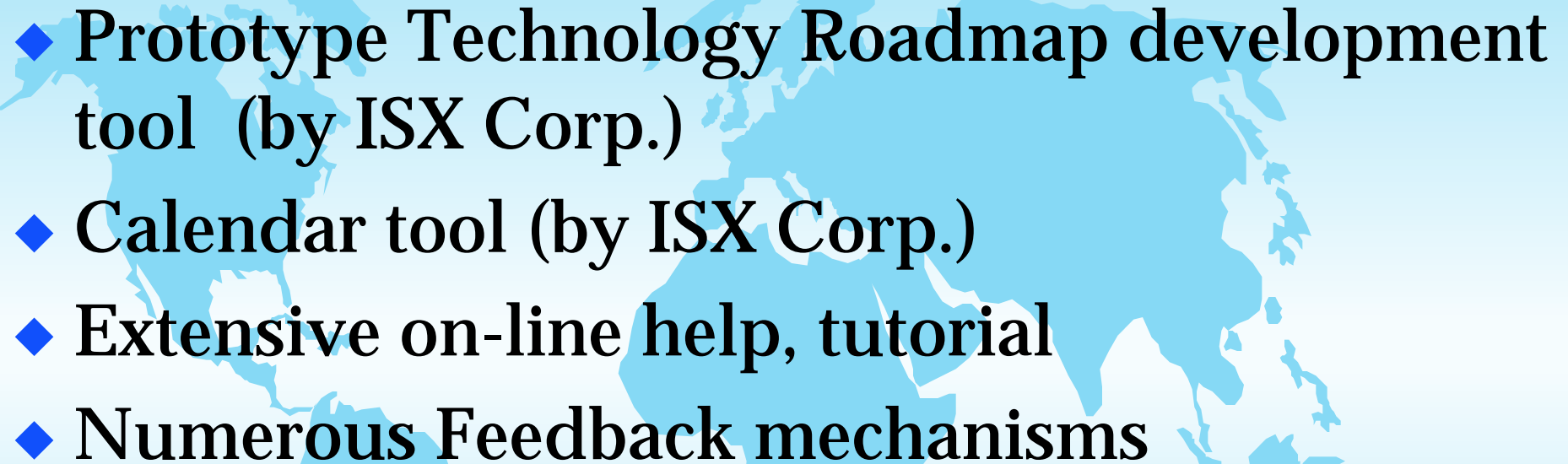
Action-Item Manager

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- ◆ Form-based interface for assignment of action items, status updates
 - ◆ Automatic email notification:
 - msg to “stuckee” when action item assigned
 - msg back to requestor when action item closed

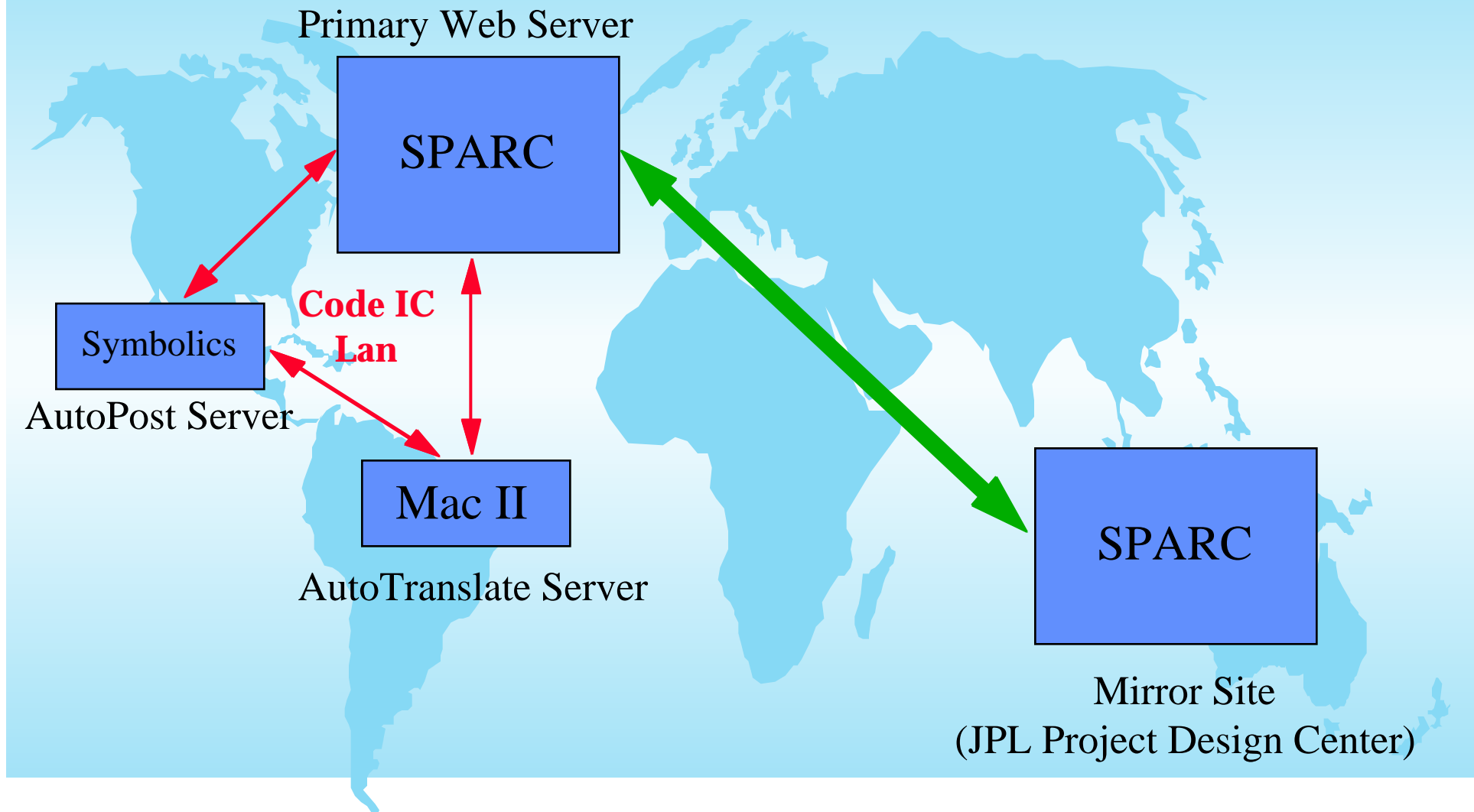
Mailing List Manager

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- ◆ **Permits user-defined mailing lists**
 - mailing list name, email alias
 - editing of mailing list members
 - ◆ **Automatically generates HyperMail archive**
 - ◆ **Approximately 80 mailing lists created so far**

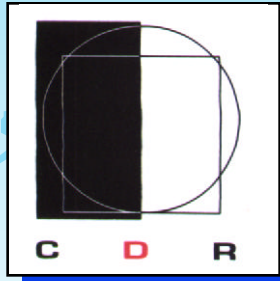
Other Facilities

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- ◆ **Prototype Technology Roadmap development tool (by ISX Corp.)**
 - ◆ **Calendar tool (by ISX Corp.)**
 - ◆ **Extensive on-line help, tutorial**
 - ◆ **Numerous Feedback mechanisms**

System Architecture



Collaborators



Stanford Center for Design Research

Generation and Capture of Design Knowledge
Collaboration Metrics

Enterprise Integration Technologies

Model-based Indexing and Retrieval



ISX Corporation

Technology Roadmap Integration
Online Productivity Tools

JPL Project Design Center

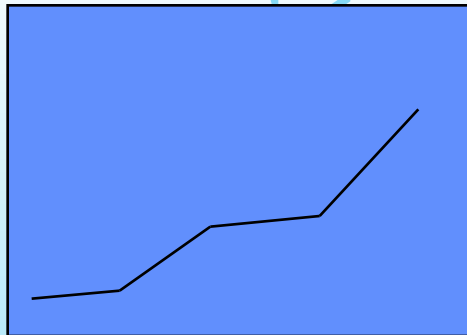
Mirror Site Administration



Usage Statistics

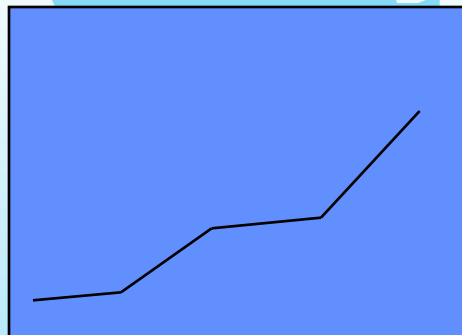
- ◆ N current users
- ◆ m MB of stored data

Registered Users



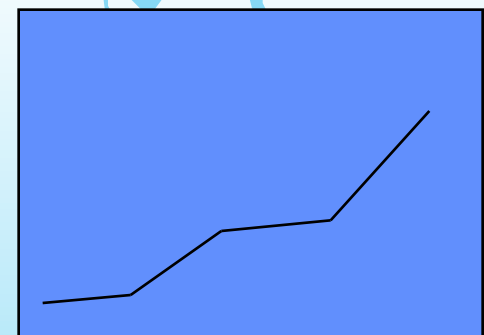
6/95 - 6/96

Page "Hits"



6/95 - 6/96

Document Submissions



6/95 - 6/96

(replace with real graphs/numbers)

What's Next?

◆ Version 2.0:

- Customizable “Views” into document base
- Extensible “page template library”
- Improved file upload
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◆ Integration of DKC tools

◆ Increased maintainability&portability



Demonstration

